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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/657,128	09/09/2003	Yoshiharu Sasaki	8051-1012	9210

466 7590 01/18/2007  
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EXAMINER
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PHAM, HAI CHI

ART UNIT	PAPER NUMBER
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2861

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/18/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

# Office Action Summary

Application No.

10/657,128

Applicant(s)

SASAKI, YOSHIHARU

Examiner

Hai C. Pham

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 25 October 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1,3-5 and 7-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-5 and 7-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Allowable Subject Matter*

1. The indicated allowability of claims 2-3 and 6-8, the content of claims 2 and 6 being now incorporated into claims 1 and 5, respectively, is withdrawn in view of the newly discovered reference to Nishimoto et al. (JP 2001-318219). Rejections based on the newly cited reference follow.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1 and 3-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohnishi et al. (US 4,125,842) in view of Nishimoto et al. (JP 2001-318219).

Ohnishi et al. discloses a method and apparatus for laser recording of an image character, the method comprising the step of fixing a glass substrate on a cylindrical support member (the metallic film 19 is made of a glass substrate 1 on which a metallic recording layer 2 is deposited, and is wound on the external surface of the rotary drum 18) (Figs. 2-3) (col. 2, lines 48-54), rotating the cylindrical support member (the drum 18 is rotated in the main scanning direction as shown by the arrow next to the drum in Fig. 3), moving a laser recording head in an axial direction of the cylindrical support member

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(the recording head is fixed on the rack 17 moving parallel to the rotation axis of the drum in the sub-scanning direction), and modulating and controlling a laser beam based on an image data through the laser recording head to record an image character on the glass substrate (the laser light emitted from the laser source 6 is modulated by the acousto-optical modulator 12 based on the image character data in the form of the facsimile signal S to record the image on the metallic film 19) (col. 3, lines 9-28).

Ohnishi et al. fails to teach the radius of curvature of the cylindrical support member being set within a bending permissible stress of the glass substrate.

Nishimoto et al. discloses a method for manufacturing a color filter for a liquid crystal display device using a glass substrate (2), wherein the radius of curvature of the cylindrical support (9) on which the glass substrate is wound such that a photosensitive coloring constituent can be applied onto the glass substrate, is carefully set based on the thickness of the glass substrate such that the glass substrate is not broken under the bending stress by using the provided bending stress equation (1) (English translation, paragraphs [0013]-[0014], [0025]).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to set the radius of curvature of the drum in the device of Ohnishi et al. to be within the bending permissible stress of the glass substrate as taught by Nishimoto et al. for the purpose of preventing the glass substrate from being broken under bending stress while being carried by the cylindrical support.

Ohnishi et al. also fails to teach the radius of curvature of an ordinary glass being 1.39 m or more.

Nishimoto et al. further discloses the radius  $R$  of curvature of the cylindrical support (9) or for that matter the radius curvature of the glass substrate, to be increased with the increase of the thickness  $y$  of the glass substrate, i.e.,

$$R = 0.5 \text{ m when } y = 50 \text{ } \mu\text{m}$$

and  $R = 2.5 \text{ m when } y = 500 \text{ } \mu\text{m}$

In other words, one can set the radius of curvature of the cylindrical support to be 1.39 m or more depending on the thickness of the glass substrate.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to set the radius of curvature of the drum in Ohnishi et al. to be 1.39 m or more since Nishimoto et al. indicates that a proper radius of curvature of the cylindrical support can be set based on the thickness of the glass substrate.

With regard to claim 4, the fact that a plurality of glass substrates or recording media (19) are subsequently fixed onto the cylindrical support member for successive recording is inherent to the automatic facsimile receiver or any image recording system as taught by Ohnishi et al.

4. Claims 5, 7 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohnishi et al. in view of Inoue et al. (US 6,227,109) and Nishimoto et al.

Ohnishi et al. discloses all the basic limitations of the claimed invention except for the glass substrate housing cassette, the glass substrate delivery mechanism and the glass substrate fixing mechanism, the fixing mechanism fixing both ends of the glass substrate on the cylindrical support member.

However, it is old and well known in the art for a printing system to include a recording medium supplying unit for subsequently feeding and delivering the recording medium to the printing station, and pressing rollers for holding the recording medium on the surface of the drum as evidenced by Inoue et al., which teaches a printing apparatus having a recording medium supplying apparatus (1020) for supplying the recording medium stacked in the recording medium feeding station (1021), a recording medium pickup apparatus (1022) and a transfer conveyor (1023) for delivering the recording medium to the printing station where the recording medium is pressed and fixed at both ends onto the plate cylinder (2011) using the pressing roller (2027) and the claw (2032) (Figs. 1 and 20).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to provide the device of Ohnishi et al. with the housing cassette, the delivery mechanism and the fixing mechanism as taught by Inoue et al. since Inoue et al. teaches this to be well known in the art for a printing system to be able to carry the image recording operation from start to finish.

Ohnishi et al. also fails to teach the radius of curvature of the cylindrical support member being set within a bending permissible stress of the glass substrate.

Nishimoto et al. discloses a method for manufacturing a color filter for a liquid crystal display device using a glass substrate (2), wherein the radius of curvature of the cylindrical support (9) on which the glass substrate is wound such that a photosensitive coloring constituent can be applied onto the glass substrate, is carefully set based on the thickness of the glass substrate such that the glass substrate is not broken under

the bending stress by using the provided bending stress equation (1) (English translation, paragraphs [0013]-[0014], [0025]).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to set the radius of curvature of the drum in the device of Ohnishi et al. to be within the bending permissible stress of the glass substrate as taught by Nishimoto et al. for the purpose of preventing the glass substrate from being broken under bending stress while being carried by the cylindrical support.

5. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ohnishi et al. in view of Nishimoto et al., as applied to claim 1 above, and further in view of Inoue et al.

Ohnishi et al., in view of Nishimoto et al., discloses all the basic limitations of the claimed invention except for the pressing and fixing mechanism for pressing and fixing both ends of the glass substrate on the cylindrical support member.

However, it is old and well known in the art for a printing system to include pressing rollers for holding the recording medium on the surface of the drum as evidenced by Inoue et al., which teaches a printing apparatus having a recording medium supplying apparatus (1020) for supplying the recording medium stacked in the recording medium feeding station (1021), a recording medium pickup apparatus (1022) and a transfer conveyor (1023) for delivering the recording medium to the printing station where the recording medium is pressed and fixed at both ends onto the plate cylinder (2011) using the pressing roller (2027) and the claw (2032) (Figs. 1 and 20).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to provide the device of Ohnishi et al. with the pressing and fixing mechanism as taught by Inoue et al. since Inoue et al. teaches this to be well known in the art for a printing system to be able to carry the image recording operation while the glass substrate is being stably held against the drum.

6. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ohnishi et al. in view of Inoue et al. and Nishimoto et al., as applied to claim 5 above, and further in view of Vogelgesang et al. (U.S. 5,342,682).

Ohnishi et al., as modified by Inoue et al. and Nishimoto et al., discloses all the basic limitations of the claimed invention except for the cylindrical support member being formed with a plurality of discs arranged in an axial direction.

Vogelgesang et al. discloses a rotatable recording drum comprising a plurality of discs (drum sections 12) arranged in the axial direction (Figs. 1A-1B).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to provide the recording drum of Ohnishi et al. with a plurality of drum sections or discs as taught by Vogelgesang et al. The motivation for doing so would have been to provide a sturdy drum body.

7. Claims 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohnishi et al. in view of Nishimoto et al., as applied to claim 1 above, and further in view of Yamane et al. (JP 62-075602).



Ohnishi et al., as modified by Nishimoto et al., discloses all the basic limitations of the claimed invention except for the transfer sheet being superimposed on the glass substrate and the laser recording head exposing the transfer sheet to cause image transfer from the transfer sheet onto the glass substrate, and for repeating the same step for forming a plurality of colors on the glass substrate.

Yamane et al. discloses forming a color filter by overlaying a transfer sheet (dye film layer 6 provided on a base sheet 4) over a transparent base plate (3) made of glass (e.g., silica), exposing the transfer sheet with laser light to transfer the dye in the dye film layer 96) to the transparent base plate, the procedure being repeated corresponding to the number of necessary colors as required by the color filter (see Abstract).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to use the dye transfer sheet in the device of Ohnishi et al. as taught by Yamane et al. The motivation for doing so would have been to provide a color filter having high heat resistance and high weather resistance as suggested by Yamane et al.

8. Claims 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohnishi et al. in view of Inoue et al. and Nishimoto et al., as applied to claim 5 above, and further in view of Yamane et al.

Ohnishi et al., as modified by Inoue et al. and Nishimoto et al., discloses all the basic limitations of the claimed invention except for the transfer sheet being

superimposed on the glass substrate and the laser recording head exposing the transfer sheet to cause image transfer from the transfer sheet onto the glass substrate, and for repeating the same step for forming a plurality of colors on the glass substrate.

Yamane et al. discloses forming a color filter by overlaying a transfer sheet (dye film layer 6 provided on a base sheet 4) over a transparent base plate (3) made of glass (e.g., silica), exposing the transfer sheet with laser light to transfer the dye in the dye film layer 96) to the transparent base plate, the procedure being repeated corresponding to the number of necessary colors as required by the color filter (see Abstract).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to use the dye transfer sheet in the device of Ohnishi et al. as taught by Yamane et al. The motivation for doing so would have been to provide a color filter having high heat resistance and high weather resistance as suggested by Yamane et al.

### ***Response to Arguments***

9. Applicant's arguments with respect to claims 1, 3-5 and 7-16 have been considered but are moot in view of the new grounds of rejection.

**Contact Information**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai C. Pham whose telephone number is (571) 272-2260. The examiner can normally be reached on M-F 8:30AM - 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen D. Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



HAI PHAM  
PRIMARY EXAMINER

January 9, 2007